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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/666,753	09/18/2003	Mike Steed	100202463-1	8008
22879	7590	02/08/2006	EXAMINER FEGGINS, KRISTAL J	
HEWLETT PACKARD COMPANY P O BOX 272400, 3404 E. HARMONY ROAD INTELLECTUAL PROPERTY ADMINISTRATION FORT COLLINS, CO 80527-2400			ART UNIT 2861	PAPER NUMBER

DATE MAILED: 02/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/666,753

Applicant(s)

STEED ET AL.

Examiner

K. Feggins

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 1-16 and 33-38 is/are allowed.
- 6) ☒ Claim(s) 17, 18, 20-27 and 30 is/are rejected.
- 7) ☒ Claim(s) 19, 28, 29, 31 and 32 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 9/18/2003.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Specification***

1. The disclosure is objected to because of the following informalities: There is nothing in the Specification that discloses or supports an ejection chamber having a pattern designed to primarily to create fluid flow. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 30 is rejected under 35 U.S.C. 102(b) as being anticipated by Nakamura (US 6,520,633 B2).

#### **Nakamura discloses the following claimed limitations:**

- \* regarding claim 30, A method (taught by apparatus);
- \* individually ejecting fluid from multiple ejection chambers of a printing device with ejection elements of a fluid cartridge that comprises the ejection chambers in a pattern designed primarily to create fluid flow to move a contaminant present in fluid contained in a fluid-feed channel configured to supply fluid to the multiple ejection chambers (col 5, lines 13-37, figs 1 & 7)

\* responsive to said ejecting, moving fluid in the fluid-feed channel sufficiently to move a contaminant in a desired direction within the fluid-feed channel (col 5, lines 13-37, figs 1 & 7).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 17, 18, 20, 22-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chan et al. (US 6,547,379 B2) in view of Chen et al. (6,799,837 B1).

**Chan et al. ('379) disclose the following claimed limitations:**

- \* regarding claim 17, a system (Abstract, figs 3, 4, 6 & 7);
- \* a fluid-feed channel/ink passage, 122/ configured to supply fluid to a plurality of ejection chambers/112, ink channels/;
- \* configured to cause fluid to be ejected from one or more of the ejection chambers in a contaminant moving pattern that creates fluid flow designed to move a contaminant contained in the fluid-feed channel in a desired direction/fluid flows and ink is ejected and leaves residual bubbles/contaminants/ that are moved into the bubble chamber/ (figs 3, 4, 6 & 7, col 3, lines 31-37, 42-60)
- \* regarding claim 18, wherein the contaminant moving pattern creates fluid flow from a first end of the fluid-feed channel toward a generally opposing second end of the

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fluid-feed channel (fluid travels from the ink channel, 112, to the be ejected out by the printhead and the residual bubbles move up into the bubble chamber, 116/.

\* regarding claim 20, wherein the contaminant comprises a bubble/126/.

\* regarding claim 22, wherein the contaminant comprises one or more bubbles and wherein the processor is configured to move the bubbles toward a structure configured to evacuate bubbles from the fluid-feed channel/bubbles are moved into the bubble chamber which is not in the ink passge/ (figs 3, 4, 6 & 7).

\* regarding claim 23, wherein the processor and the fluid-feed channel are incorporated in a printing device (col 1, lines 8-10, figs 3, 4, 6 & 7).

\* regarding claim 24, wherein the fluid-feed channel is incorporated on a printing device ( col 1, lines 8-10, figs 3, 4, 6 & 7).

\* regarding claim 25, a microelectro mechanical systems device (Abstract, figs 3, 4, 6 & 7);

\* means for supplying fluid along a fluid-feed path to a plurality of ejection chambers, individual ejection chambers comprising an energizing element configured to eject fluid from an associated individual ejection chamber (col 3, lines 8-55, figs 3, 4, 6 & 7);

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\* means for moving a contaminant in a desired direction along the fluid-feed path by sequentially ejecting fluid from at least some of the ejection chambers in a pattern designed to create fluid flow in the fluid-feed path to move the contaminant (col 3, lines 8-55, figs 3, 4, 6 & 7).

\* regarding claim 26, a printing device (Abstract, figs 3, 4, 6 & 7);

\* a print head comprising multiple ejection chambers and a fluid-feed channel configured to supply fluid to the ejection chambers (col 3, lines 8-55, figs 3, 4, 6 & 7).

\* configured to cause fluid ejection from individual ejection chambers in a pattern designed to move a bubble in a desired direction within the fluid-feed channel/bubbles are moved into the bubble chamber which is not in the ink passge/ (col 3, lines 8-55, figs 3, 4, 6 & 7).

\* regarding claim 27, wherein the ejection chambers are arranged in a generally linear array extending along a long axis of the fluid-feed channel (figs 3, 4, 6 & 7).

**Chan et al. ('379) does not disclose the following claimed limitations:**

\* regarding claim 24, processor is incorporated in a computing device coupled to the printing device.

\* further regarding claim 26, a controller

**Chan et al. ('837) disclose the following claimed limitations:**

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\* regarding claims 24 & 26, a processor is incorporated in a computing device coupled to the printing device; a controller (fig 2) for the purpose of receiving control signals and driving heating elements according to the control signals.

It would have been obvious at the time of the invention was made to a person having ordinary skill in the art to utilize a processor is incorporated in a computing device coupled to the printing device; a controller as taught by Chan et al. ('837) into Chan ('379) for the purpose of receiving control signals and driving heating elements according to the control signals.

6. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chan et al. (US 6,547,379 B2) as modified by Chen et al. (6,799,837 B1) as applied to claim 18 above, and further in view of Balazar (US 4,929,963).

**Chan et al. ('379) as modified by Chen et al. ('837) disclose all of the claimed invention except for the following:**

\* regarding claim 21, wherein the contaminant comprises a particle.

**Balazar discloses the following:**

\* regarding claim 21, wherein the contaminant comprises a particle (col 3, lines 50-54) for the purpose of preventing blockage within the printer.

It would have been obvious at the time of the invention was made to a person having ordinary skill in the art to utilize a contaminant having a particle, as taught by Balazar into Chan et al. ('837) as modified by Chan ('379) for the purpose of preventing blockage within the printer.

***Response to Arguments***

7. Applicant's arguments filed 11/28/2005 have been fully considered but they are not persuasive. Applicant's argument that Chan does not disclose a processor that is configured to "cause fluid to be ejected from one or more of the ejection chambers in a contaminant moving pattern... in a desired direction" and that Chan's residual bubbles simply float upward in the bubble chamber; are not ejected in a "contaminant moving pattern" and the residual bubbles are not pre-existing contaminants. However, Chan does disclose a microprocessor that controls the printhead driving circuits during printing and non-printing operations where bubbles are ejected during nozzle maintenance. Therefore, during nozzle maintenance, fluid is ejected from the printhead along with the bubbles (the bubbles are moved out of the printhead). Although, Applicant refers to a "contaminant moving pattern" bubbles that are ejected out of the printhead would move in a pattern to be ejected from the head, maybe not a distinct pattern but still a pattern or a contaminant moving pattern. Furthermore, applicant does not denote what a contaminant moving pattern is, other than contaminants being ejected from the printhead. Also, residual bubbles or any bubbles present in printhead during ejection are pre-existing bubbles.

Regarding applicant's argument individually ejecting fluid is noted. However, Chan does disclose nozzles where ink is ejected individually from each one of the nozzles and each of the nozzles has a heating element for forming bubbles and ejecting ink from each of the nozzles.



In response to applicant's arguments against the references individually (Chan), one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

### ***Allowable Subject Matter***

8. Claims 1-16, 33-38 are allowed.

Claims 19, 28 & 29, 31 & 32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The primary reason for allowance of claims 1-16 is the inclusion of the limitations of a device that includes a controller configured to cause ejection elements to be energized sufficiently to cause fluid to be ejected from one or more of the ejection chambers in a pattern designed to move a bubble to a region where the bubble can pass through the filter. It is this limitation found in the claim, as it is claimed in the combination of that has not been found, taught or suggested by the prior art of record, which makes these claims allowable over the prior art.

### ***Conclusion***

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

### Communication With The USPTO

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to K. Feggins whose telephone number is 571-272-2254. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Talbott Dave can be reached on 571-272-1934. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
K. FEGGINS  
PRIMARY EXAMINER 2/26